

**RECEIVED  
CENTRAL FAX CENTER****JUN 14 2007**Serial No. 10/677,318  
Filed: October 3, 2003**REMARKS/ARGUMENTS**

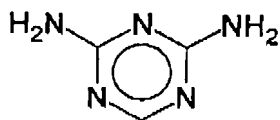
With the above amendments, claim 1 has been amended to further define the invention. Claims 11 to 15 have been canceled.

In the Office Action, the Patent Office rejected claims 6 and 7 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with written description requirement; rejected claims 1 to 9, 11 to 15, and 32 to 37 under 35 U.S.C. § 102(e) as allegedly being anticipated over Mizutani et al (US 6808869); rejected claims 13 to 15 under 35 U.S.C. § 102(e) as allegedly being anticipated over Neisser et al (US 2003/0129547); rejected claims 13 to 15 under 35 U.S.C. § 102(b) as allegedly being anticipated over Pawlowski et al (US 6277750); rejected claims 1 to 9, 11 to 15, and 32 to 37 under 35 U.S.C. § 112, first paragraph, as allegedly being broader than the enabling disclosure; rejected claims 1 to 9, 11 to 15, and 32 to 37 under 35 U.S.C. § 102(b) as allegedly being fully met by Hasegawa et al (US6280898) or Sato et al (US2002/0098440); and rejected claims 1 to 9, 11 to 15, and 32 to 37 under 35 U.S.C. § 102(e) as allegedly being fully met by Nishimura et al (US6800414). These rejections are traversed for the reasons set forth below.

In the Office Action, the Patent Office rejected claims 1 to 9, 11 to 15, and 32-37 as allegedly being fully met by Mizutani et al. With the amendment to claim 1, Mizutani et al do not disclose applicants' amines which are not soluble in the solvent of the photoresist composition which is used with the antireflective coating composition. The Patent Office stated that Mizutani et al disclosed basic compounds such as guanamine and benzimidazole.

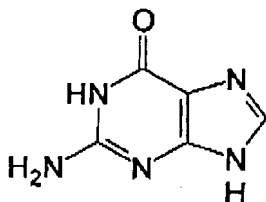
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Applicants note that while Mizutani et al disclose guanamine, this is not the same as guanine, which is in applicants' claims. Guanamine has the structure



guanamine

whereas guanine has the structure



guanine

The rejection is traversed and withdrawal thereof is requested.

In the Office Action, the Patent Office rejected claims 13 to 15 as allegedly being fully met by Neisser et al. With the cancellation of claims 13 to 15, this rejection is now moot.

Also in the Office Action, the Patent Office rejected claims 13 to 15 as allegedly being fully met by Pawlowski et al. With the cancellation of claims 13 to 15, this rejection is now moot.

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Applicants incorporate by reference their earlier comments with regard to this rejection.

In the present Office Action, the Patent Office referred to paragraph 4 from the prior final Office Action, which in turn referred to paragraph 4 from the first Office Action. Therein, the Patent Office stated because the specification, while being enabling for polymer containing antireflection layers, does not reasonably provide enablement for antireflection layers with only basic compounds. The Patent Office has not made out a prima facie case for this rejection and it is traversed.

Applicants' invention is directed to an antireflective coating composition that contains a base that is not soluble in the solvent of a photoresist layer placed over the antireflective coating composition. The Patent Office stated in the first Office Action that polymers are necessary as binders for the layers to bind the basic compounds and as radiation absorbers for antireflection or as binder for radiation absorbers. How does this statement by the Patent Office relate to applicants' invention?

The Patent Office stated that applicants' specification does not reasonably provide enablement for antireflection layers with only basic compounds. Applicants' claims and specification are to an antireflective coating composition, the composition having a base which is not soluble in the solvent of the photoresist composition which is coated thereover. The word composition denotes other materials and the composition has been clearly explained in applicants' application. See for example, page 3, line 28 to page 4, line 8; page 7, lines 4 to 15; page 11, line 15 to page 12 line 11.

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As for the statement by the Patent Office about polymers and binders, antireflective coating compositions are well known to those skilled in the art and those skilled artisans will recognize that antireflective coating compositions must contain polymers and radiation absorbers. As stated on page 3, line 28 to page 4, line 8, examples of antireflective coating compositions are disclosed in several US patents, the contents of which are incorporated by reference into applicants' application. Thus, there is sufficient disclosure to support applicants' claims.

Indeed, a patent application need not teach, and preferably omits, what is well known in the art. Antireflective coating compositions are well known in the art and applications are written to enable those skilled in the art. A patent specification need not disclose what is well known in the art. Applicants have provided sufficient information and description to permit a skilled artisan to carry out applicants' claimed invention. The Patent Office has not provided any evidence to the contrary. In fact, the Patent Office has not set forth a reasonable explanation as to why it believes that the scope of applicants' claims is not adequately enabled by applicants' specification.

The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation. The test is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.

The Patent Office bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification.

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of the application. While the specification must enable the skilled artisan to practice the full scope of the claimed subject matter, the specification need not necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending upon the predictability of the art.

The Patent Office has not established that practicing the full scope of the claims would have required undue experimentation. Thus, the Patent Office has not met its burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application.

Applicants' specification provides that antireflective coating compositions are well known in the art. Indeed, the Neisser et al. document, cited by the Patent Office in rejecting certain claims, also provides a thorough description of antireflective coating compositions. A person skilled in the pertinent art would know how to make and use the claimed invention without undue experimentation, as demonstrated in the prior art. Thus, one skilled in the art would have known the background and the makeup of antireflective coating compositions. Such, the experimentation required to identify antireflective coating compositions would not have been undue.

A disclosure which contains a teaching, whether by the use of illustrative examples or by broad descriptive terminology, of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in

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compliance with the enablement requirement unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support

Thus, the dispositive issue is whether the applicants' disclosure, considering the level of ordinary skill in the art as of the date of the applicants' application, would have enabled a person of such skill to make and use the applicants' invention without undue experimentation. The threshold step in resolving this issue is to determine whether the Patent Office has met its burden of proof by advancing acceptable reasoning inconsistent with enablement. This the Patent Office has not done. While the Patent Office has mentioned that polymers are necessary as binders for the layers to bind the basic compounds and as radiation absorbers for antireflection or as binders for radiation absorbers, that this alone is not a sufficient basis, in this case, to meet its burden of proof. This is especially true in view of the fact that applicants have incorporated by reference documents that augment their disclosure in demonstrating that the make up of antireflective coating compositions which were known as of the date of applicants' filing date of their application. These documents describe the preparation of antireflective coating compositions in great detail and one of ordinary skill art, armed with this knowledge, could readily prepare antireflective coating compositions. Thus, applicants' disclosure enables a person of ordinary skill to make and use the applicants' invention without undue experimentation.

Because the Patent Office has failed to provide a cogent reason for such a lack of enablement, it is applicants' view that the rejection of the claims over 35 U.S.C. § 112, first paragraph, is traversed and withdrawal thereof is requested.

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Also in the Office Action, the Patent Office rejected claims 1 to 9, 11 to 15, and 31 to 37 as allegedly being fully met by Hasegawa et al or Sato et al. The Patent Office stated that Hasegawa et al discloses coating compositions with polymers, photoacids and basic amine compounds. There is no basis for the Patent Office's statement that the layers would inherently reduce reflection if used as an underlayer to some extent. The Hasegawa et al compositions are photoresist compositions which, in practice, are coated over antireflective coating compositions.

As stated in Hasegawa et al, "[a] suitable basic compound used herein is a compound capable of suppressing the rate of diffusion when the acid generated by the photoacid generator diffuses within the resist film. The inclusion of this type of basic compound holds down the rate of acid diffusion within the resist film, resulting in better resolution." (see column 26, lines 58 to 61). In this instance, the basic compound would have to be soluble in the photoresist solvent ("The organic solvent used herein may be any organic solvent in which the base resin, photoacid generator, and other components are soluble.", column 21, lines 41 to 43), which is the opposite of what applicants' invention. Applicants do not want the base in their antireflective coating compositions to be soluble in the solvent of the photoresist composition coated thereover.

The same is true for Sato et al. As stated in paragraph [0109], "[a]mine compounds are preferably added among others as the above-mentioned organic basic compounds, from the viewpoints of not only decreasing changes in performance until after heating after exposure, but also more improving the defocus latitude depended on line pitch of patterns which is the effect of the present invention." Further on in Sato et al at paragraph [0111], [t]he compositions of the present invention are dissolved in solvents dissolving the above-mentioned respective components, and applied onto supports.",

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which is the opposite of what applicants' invention. Applicants do not want the base in their antireflective coating compositions to be soluble in the solvent of the photoresist composition coated thereover.

The rejection of claims 1 to 9, 11 to 15, and 32 to 37 over either Hasegawa et al or Sato et al is traversed and withdrawal thereof is requested.

Finally in the Office Action, the Patent Office rejected claims 1 to 9, 11 to 15, and 32 to 37 as allegedly being fully met by Nishimura et al.

Like Hasegawa et al and Sato et al, Nishimura et al also disclose compositions that are photoresist compositions which, in practice, are coated over antireflective coating compositions. For Nishimura et al, "[i]t is preferable to add an acid diffusion controller to the radiation-sensitive resin composition of the present invention. The acid diffusion controller controls diffusion of an acid generated from the acid generator (B) upon exposure in the resist film to hinder unfavorable chemical reactions in the unexposed area." (column 48, lines 40 to 46). Thereafter, it is stated that "[t]he radiation-sensitive resin composition of the present invention is prepared as a composition solution by dissolving the composition in a solvent ... ." (column 51, lines 31 to 33), which is the opposite of what applicants' invention. Applicants do not want the base in their antireflective coating compositions to be soluble in the solvent of the photoresist composition coated thereover.

As such, the rejection of claims 1 to 9, 11 to 15, and 32 to 37 over Nishimura et al is traversed and withdrawal thereof is requested.



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Applicants enclose herewith a one (1) month extension of time.

Applicants submit that the concerns of the Patent Office have been addressed  
Withdrawal of the rejections and issuance of a Notice of Allowance is respectfully  
solicited.

Respectfully submitted,



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